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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/609,913

07/03/2000

Jerry L. Mizell

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EXAMINER

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ART UNIT

PAPER NUMBER

2663

DATE MAILED: 01/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/609,913	Applicant(s) MIZELL ET AL.	
	Examiner Christine Ng	Art Unit 2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 15-21 and 40-51 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 15-21, 40, 41 and 45-48 is/are rejected.
- 7) ☒ Claim(s) 42-44 and 49-51 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 July 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-6, 15-19, 40, 41, 45 and 48 are rejected under 35 U.S.C. 102(e) as being anticipated ^{by} ~~over~~ U.S. Patent No. 6,512,756 to Mustajarvi et al.

Referring to claim 1, Mustajarvi et al disclose in Figure 1 a system for use in a mobile communications network having a plurality of cell sites (Cell1 and Cell2). The system comprises an interface (Gb) adapted to communicate with a base station system (BSC1) over a network (frame relay network). The system also comprises a controller (SGSN1) adapted to transmit and receive data through the interface (Gb) over the network (frame relay network) with the base station system (BSC1) according to a packet-switched protocol (frame relay). Frame relay is a packet-switched protocol that is used over the Gb interface between SGSN1 and BSC1. Refer to Column 1, lines 33-45 and Column 2, lines 25-28.

Referring to claims 2 and 3, Mustajarvi et al disclose in Figure 2 that the packet-switched-protocol (frame relay) comprises a connectionless, packet-based protocol (IP). As shown in Figure 2, the Gb interface between the BSS and SGSN is a frame relay

layer. Refer to Column 2, lines 25-28. However, above the frame relay layer is a L3MM layer that can be an Internet Protocol instead of a L3MM protocol. Refer to Column 1, line 65 to Column 2, line 3. Therefore, the frame relay protocol comprises a connectionless, packet-based protocol (IP) above it.

Referring to claim 4, Mustajarvi et al disclose in Figure 1 that the interface (Gb) and controller (SGSN1) comprise elements of a General Packet Radio Service system. Figure 1 illustrates a GPRS network architecture. Refer to Column 6, line 47.

Referring to claim 5, Mustajarvi et al disclose in Figure 1 that the network comprises a Gb network (interface between BSC1 and SGSN1). Refer to Column 2, lines 25-28.

Referring to claim 6, Mustajarvi et al disclose in Figure 1 that a serving General Packet Radio Service support node comprises the interface (Gb) and the controller (SGSN1). A serving GPRS support node provides "a packet services for mobile data terminals via several base stations, i.e. cells" (Column 1, lines 41-42) through the Gb interface.

Referring to claim 15, Mustajarvi et al disclose in Figure 1 a method of communicating in a mobile communications system having a with a base station system (BSC1); a system controller (SGSN1) and an interface (Gb) between the with a base station system (BSC1) and the system controller (SGSN1). The method comprises transmitting and receiving data packets over the interface (Gb) between with a base station system (BSC1) and the system controller (SGSN1) according to a packet-switched protocol (frame relay). Frame relay is a packet-switched protocol that is used

over the Gb interface between SGSN1 and Cell 1. Refer to Column 1, lines 33-45 and Column 2, lines 25-28.

Referring to claim 16, refer to the rejection of claims 2 and 3.

Referring to claim 17, Mustajarvi et al disclose in Figure 1 that transmitting and receiving comprise transmitting and receiving over a Gb interface. SGSN provides "a packet services for mobile data terminals via several base stations, i.e. cells" (Column 1, lines 41-42) through the Gb interface.

Referring to claim 18, Mustajarvi et al disclose in Figure 1 a serving General Packet Radio Service support node (SGSN) for use in a mobile communications system having base station systems (BSC1 and BSC2). The SGSN comprises an interface (Gb) to a network (frame relay network) coupled to the base station systems (BSC1 and BSC2), the interface (Gb) comprising a packet-switched element (frame relay protocol) to manage communication according to a packet-switched protocol (frame relay) over a network (frame relay network) between the GPRS support node (SGSN1) and at least one of the base station systems (BSC1 and BSC2). Frame relay is a packet-switched protocol that is used over the Gb interface between SGSN1 and Cell 1. Refer to Column 1, lines 33-45 and Column 2, lines 25-28.

Referring to claim 19, refer to the rejection of claims 2 and 3.

Referring to claim 40, Mustajarvi et al disclose in Figure 2 that the interface (Gb) comprises a network layer (frame relay layer) to manage communications of packets over the network, and a transport layer (BSSGP layer) to manage connections over the network. The frame relay layer establishes "semipermanent connections for which

several subscribers' LLC PDUs are multiplexed' (Column 2, lines 26-27) between the SGSN and BSS. The BSSGP protocol "transmits routing information and information related to QOS between a BSS and an SGSN" (Column 2, lines 23-24).

Referring to claim 41, Mustajarvi et al disclose in Figure 2 that the controller (SGSN) comprises a network services layer (LLC relay) to transport packets through the transport (BSSGP) and network (frame relay) layers. The LLC relay "relays LLC protocol data units between a BSS-SGSN interface" (Column 2, lines 19-21).

Referring to claim 45, refer to the rejection of claim 5.

Referring to claim 48, refer to the rejection of claims 2 and 3.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 7, 8, 46 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,512,756 to Mustajarvi et al in view of U.S. Patent No. 6,456,627 to Frodigh et al.

Referring to claim 7, Mustajarvi et al disclose in Figure 1 a node (Cell1) for use in a mobile communications network having a system controller (SGSN1). The node (Cell 1) comprises a base station (BTS1) adapted to communicate with the mobile stations (MS). The node also comprises a module (BSC1) coupled to the base station (BTS1) and adapted to communicate with the system controller (SGSN1) according to a packet-

switched protocol. Frame relay is a packet-switched protocol that is used over the Gb interface between SGSN1 and BSC1. Refer to Column 1, lines 33-45 and Column 2, lines 25-28.

Mustajarvi et al do not disclose the use of one or more radio transceivers. Instead, Mustajarvi et al disclose a base station (BTS1) instead of radio transceivers.

Frodigh et al disclose that radio transceivers are connected to a base station to communicate with mobile stations. As shown in Figure 6, "the radio transceivers (TRXs) 76 are coupled to the antennas 24 through combiner/duplexers 80 that combine downlink transmission signals from the TRXs 76 and distribute the uplink received signals from the mobile station 12" (Column 10, lines 28-32). Furthermore, as shown in Figure 7, the radio transceiver include uplink components to receive signals from mobile stations: down-conversion block 91, sampler block 92, demodulator 96, and channel decoder 97. Refer to Column 10, lines 35-63. The radio transceiver also includes downlink components to send signals to mobile stations: channel coder 102, modulator 104, up-conversion block 106 and power amplifier 108. Refer to Column 10, line 66 to Column 11, line 10. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include one or more radio transceivers on the base station (BTS1); the motivation being to process uplink signals and downlink signals from the mobile stations through an antenna using up/down converters to convert between carrier and baseband frequencies, and modulators/demodulators to encode/decode the data signal.

Referring to claim 8, refer to the rejection of claims 2 and 3.

Referring to claim 46, refer to the rejection of claims 2 and 3.

Referring to claim 47, Mustajarvi et al discloses that the module (BSC1) is adapted to communicate through a Gb interface to the system controller (SGSN1) according to the connectionless, packet-based protocol. Refer to the rejection of claims 2 and 3.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,512,756 to Mustajarvi et al in view of U.S. Patent No. 6,456,627 to Frodigh et al, and in further view of U.S. Patent No. 5,815,495 to Saitoh et al.

Mustajarvi et al and Frodigh et al disclose that the module is adapted to communicate data packets through a frame relay network. Refer to Column 2, lines 25-28. Mustajarvi et al and Frodigh et al do not disclose that each packet contains addresses identifying the node and the system controller.

Saitoh et al disclose in Figure 2 that one type of frame that is transmitted over a frame relay network contains the Data Link Connection Identifier DLCI field, a destination address field D, a source address field S, a control field C and an information field I. Refer to Column 4, lines 11-21. The S field can be used to identify the origin of the message (node) and the D field used to identify the destination of the message (system controller), both of which are used to route the packet through the network on a connection, which is set up prior to data transmission. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that each packet contains addresses identifying the node and the system controller; the motivation being that in connection-oriented systems such as frame relay,

a connection must be previously set up prior to data transmission; a source and destination field are necessary to establish that predetermined connection.

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,512,756 to Mustajarvi et al in view of U.S. Patent No. 6,456,627 to Frodigh et al in view of U.S. Patent No. 5,815,495 to Saitoh et al, and in further view of U.S. Patent No. 6,584,098 to Dutnall.

Mustajarvi et al, Frodigh et al and Saitoh et al do not disclose that each packet contains Internet Protocol addresses.

Dutnall discloses in Figure 11 a TCP/IP frame that includes IP addresses for the source and destination (Element 110). Refer to Column 1, lines 41-44. In a packet-switched network, destination IP addresses are used to route a packet to its final destination. Data is transmitted "according to the availability of network resources at the time of the transmission of the individual packet" (Column 1, lines 22-23). Also, different parts of the data are routed by different parts of the network "if there is insufficient capacity on any one route for the entire message" (Column 1, lines 28-29). To do this, each data packet must carry an IP address indicating the destination of the packet, "so that at each node in the network, the packet can be routed toward its ultimate destination" (Column 1, lines 31-33). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that each packet contains Internet Protocol addresses; the motivation being that each node of the network needs to know the destination IP address of the packet in order to route it to its final destination.

7. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,512,756 to Mustajarvi et al in view of U.S. Patent No. 6,320,873 to Nevo et al.

Referring to claim 20, Mustajarvi et al do not disclose that the SGSN further comprises a User Datagram Protocol (UDP) transport component to manage connections over the network.

Nevo et al discloses in Figure 2B that a SGSN (Element 52) comprises a TCP/UDP transport component. LLC data packets are received by the SGSN (Element 52) from a mobile station (Element 40) and then are translated by the SGSN (Element 52) into TCP/UDP packets for communication over a packet-switched network to a GGSN (Element 54). "TCP is generally used when a reliable data link, such as X.25, is required between MS 40 and GGSN 54; and UDP is used when such reliability is not required, as in IP transmission" (Column 7, lines 37-40). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to include that the SGSN comprises a UDP transport component to manage connections over the network; the motivation being that UDP is a protocol to exchange data packets from a SGSN to a GGSN over a packet-switched network when a reliable data link is not required. UDP does not provide sequencing of data packets arriving at the destination, thereby saving network processing time. Network applications having small messages to transmit can save processing time by using UDP. Refer to Column 7, lines 35-47.

Referring to claim 21, Mustajarvi et al do not disclose that the SGSN further comprises a network services layer to transport data units containing signaling and bearer traffic over the network.

Nevo et al disclose in Figure 2B that the SGSN (Element 52) comprises a network services layer to transport BSSGP packet data units (PDUs) between the BSS and SGSN over a frame relay connection. "The BSSGP layer conveys routing and information related to quality of service (QOS) between the BSS 32 (or BSS 30) and SGSN 52" (Column 7, lines 1-3). Layers shown in Figure 2B are communications protocol layers "required to adapt a signaling and data stream from MS 40 for transport to GPRS 50" (Column 7, lines 61-63). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to include that the SGSN comprises a network services layer to transport data units over the network; the motivation being that a network services layer transports BSSGP PDUs between the BSS and SGSN, conveying routing and QOS information. Refer to Column 6, line 60 to Column 7, line 6.

Allowable Subject Matter

8. Claims 42-44 and 49-51 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

9. Applicant's arguments filed September 7, 2004 have been fully considered but they are not persuasive.

Referring to the argument for independent claim 1 (page 7, line 20 to page 8, line

14), claim 7 (page 10, lines 6-17), claim 15 (page 9, lines 23-29) and claim 18 (page 9, line 30 to page 10, line 4), frame relay is a packet switched protocol. A packet switched protocol can be connectionless or connection-oriented. Refer to the U.S. Patent No. 6,339,594 to Civanlar et al, which discloses that a packet switched protocol can be connectionless (e.g., the Internet) or connection-oriented (e.g., an ATM or frame relay network), as stated in the Abstract and Column 3, lines 29-34.

Referring to the argument for claims 2 and 3 (page 9, lines 9-12 and 18-22), Mustajarvi et al disclose in Figure 2 that the Gb interface between the BSS and SGSN is a frame relay layer. Refer to Column 2, lines 25-28. However, above the frame relay layer is a L3MM layer that can be replaced by an Internet Protocol layer. Refer to Column 1, line 65 to Column 2, line 3. Therefore, the frame relay protocol comprises a connectionless, packet-based protocol (IP) since it supports the IP protocol and can be used to carry IP packets.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

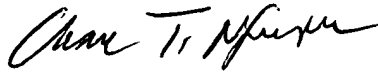
the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Ng whose telephone number is (571) 272-3124. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (571) 272-3126. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. Ng *cc*
December 29, 2004


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